



RESEARCH PROGRAM ON  
Climate Change,  
Agriculture and  
Food Security



# Climate Change, *iBroadkas Mo!* Phase 2

**Mobilizing the Rural Sector for Climate Change Adaptation and Mitigation:  
A Pilot Radio Campaign in the Philippines**

## Progress Report



**July 2018 - April 2019**



## *Climate Change: iBroadkas Mo!*

### Phase 2

#### Mobilizing the Rural Sector for Climate Change Adaptation and Mitigation: A Pilot Radio Campaign in the Philippines

#### Progress Report

**Sponsor:** CGIAR Research Program on Climate Change, Agriculture and Food Security in Southeast Asia (CCAFS SEA)

**Implementer:** Philippine Federation of Rural Broadcasters

**Date Started:** 1<sup>st</sup> release of \$12, 494.62

Value date – July 23, 2018

2<sup>nd</sup> release of \$12, 494. 62

Value date – August 14, 2018

## Backgrounder and Rationale

Radio remains as a cheap, practical, and accessible communication tool to educate rural communities about climate change. For instance, it can reach a critical mass of audience over a short period. The radio, then, is a medium suitable for the distance-based education of farmers scattered in various agro-ecological areas in the Philippines. Learning adaptation and mitigation measures is critical for farmers, who are highly vulnerable to the impacts of climate change.

Recognizing the power of radio in climate change communication, the CGIAR Research Program on Climate Change, Agriculture and Food Security in Southeast Asia (CCAFS SEA) supported the second phase of a radio campaign in the Philippines. Dubbed as "*Climate Change, iBroadkas Mo!*," the campaign educates rural broadcasters about climate change. Guided by a multi-stakeholder approach, the Philippine Federation of Rural Broadcasters (PFRB) is leading the campaign implementation. In the government side, the Philippine Department of Agriculture (DA) serves as its main government partner.

In 2018, three broadcast production workshops were organized in strategic areas in Luzon, Visayas, and Mindanao. The first workshop was organized in Cagayan de Oro, Misamis Oriental. The second workshop was hosted by the Visayas State University in Baybay, Leyte. The final workshop happened at the Isabela State University in Echague, Isabela.

The venues were chosen for their proximity to relevant actors in the field of climate change. This was considered an immediate and practical way to achieve the multi-sectoral approach being adopted by CCAFS SEA, PFRB, and DA. The workshops were attended by rural broadcasters, climate experts, local agriculturists, government authorities, and international partners, among others. Farmers provided testimonies about their situations on the ground.

One key component of this campaign is climate-smart agriculture (CSA), a transformative approach being implemented by CCAFS SEA in vulnerable communities in Southeast Asia. CSA is discussed to rural broadcasters, who will then forward their learnings to their respective listeners. Resource persons from local governments, academe, research organizations, and international partners are invited to discuss climate change in the agriculture context.

PFRB, meanwhile, teaches the broadcasters on how to package their lessons into short but attractive messages. Radio only taps into the sense of hearing. Farmers can be distracted by entertainment in televisions or in household and farm activities. One advantage of radio, though, is its portability. It can be carried in the fields and be played during breaks. Radio is also cheaper and can cover wide geographic areas. It can then serve as a bridge connecting the farmers with government programs about agriculture.

The advantages presented by the radio are suitable to the farmers, who are regularly hounded by climate change impacts. Projections warn of increasing frequency and intensity of these impacts. Informing the farmers on how to adapt and bringing to them government programs that safeguard their livelihoods are then crucial for their survival.



## Election of new officers

An inception meeting was held 7 August 2018 at the DA-Agricultural Training Institute in Quezon City, Philippines. During the meeting, PFRB members discussed the implementation of Phase 2 of “*Climate Change, iBroadkas Mo!*.” Dr. Leocardio Sebastian, Regional Program Leader of CCAFS SEA, attended the meeting as well.

Aside from talking about the implementation of Phase 2, PFRB re-arranged its organizational structure through an election. The following officers were then inducted by Dr. Sebastian:

- Presidential/Chairperson - Dr. Rogelio P. Matalang (PFRB; DWDA - Tuguegarao)
- Vice President for Luzon – Mr. Arthur Urata (PFRB Region 2)
- Vice President for Visayas- Mr. Chito Morante (PFRB)
- Vice President for Mindanao – Mr. Crismon Llanos (DXRM)
- Secretary and Treasurer – Ms. Marilou Alejandro (DA-ATI)
- Auditor – Ms. Cheche Vega Masicat (PFRB)
- Board of Directors:
  - Kadiguia Abdullah (DA-RAFID)
  - Francis Rosaroso (PFRB; DA-OASR)
  - Felicito Espiritu, Jr. (PFRB; DWRW-DA Region 3)
  - Chelo Maderoso (OPA-Leyte)
  - Sahlee Abdullah (on leave) (NDBC-DXME)
- Adviser – Dr. Rex Navarro (CCAFS SEA)



*Induction of new officers of PFRB led by Dr. Leo Sebastian, Regional Program Leader, CCAFS SEA. Photo: PFRB*

## Workshop schedules

The second phase would serve as an intensified follow-up and expansion of the campaign. PFRB, with the guidance of CCAFS SEA, decided to gather small numbers of participants for the workshops. The rural broadcasters invited were active members of PFRB who also own regular radio programs. This decision would ensure that the campaign outputs would be aired and could be evaluated.

*Table 1. Workshop schedules for Phase 2 of Climate Change, iBroadkas Mo! Phase 2*

Region	Venue	Date	Number of Pax
Mindanao	Prawn House Suites and Restaurant, Cagayan de Oro	13-14 September 2018	20
Visayas	DA-ATI, Visca, Baybay, Leyte	27-28 September 2018	26
Luzon	Isabela State University, Echague Campus	11-12 October 2018	32
Total: 78			

## Workshop documentation

The workshops were documented by CCAFS SEA. The documentation reports are uploaded in the online repository site of CCAFS. Specifically, the reports can be accessed through the link below:

- [Broadcast Production Workshops for Climate Change: iBroadkas Mo! Campaign Phase 2](#)

Popularized contents were also developed to share the status of the campaign to other stakeholders.

- News Update: [Next episode: Phase 2 of radio campaign on climate change](#)
- News Update: [Workshop for Philippine rural broadcasters about climate change and its impacts](#)
- News Update: [Linking knowledge with action: The role of media in climate change adaptation and mitigation](#)

## Production of campaign outputs

The materials were produced and translated into five languages, which were deemed dominant in the target areas of the campaign: Tagalog, Bisaya, Ilocano, Maguindanaon, and Maranao. The

use of multiple languages would ensure that the materials were understood by various audiences.

The following contractors were hired to produce ready-to-be-aired materials for the campaign.

*Table 2. Contractors hired and their deliverables*

Contractor	Items	Targeted	Actual	Scripts
1. Domingo Fugaban	• Spots (Tagalog)	10	10	
2. Chris Llanos	• Canned Interviews	(30)		
	○ Maranao	15	15	15
	○ Maguindanao	15	15	15
3. Chito Morante	• Canned Interview	(30)	36	
	○ Bisaya	15	18	0
	○ Cebuano	15	18	0
4. Arthur Urata	• Canned Interview (Ilocano)	(30)	30	30
5. Vicky B. Herrero	• Ilocano (Adaptation)	1	1	1
6. Reine Rarang	• Tagalog Composition	1	1	1
7. Malou Alejandro	• Audio-Video	(30)	30	30

## Campaign outputs

The Tagalog spots and jingles were already “on air” since September 2019 in two government-owned radio stations: DZDA 105.3 FM *Radyo Pangkaunlaran* and DWPE Radyo Pilipinas in Tuguegarao City, Cagayan. They were aired after undergoing a pretesting process with selected experts. Specifically, the spots and jingles are now aired regularly in all programs of DZDA from 5:00 AM to 7:00 PM every Monday and Saturday. This strategy provides more exposure to the materials and would be maintained throughout the year.

To reach more audiences in the Philippines and abroad, the Facebook account, DA Rehiyon Dos, owned by DA-Regional Field Office 02 (DA-RFO 02), streams DZDA programs live. The livestreaming sessions are also shared through the personal Facebook accounts of DA “farmcasters.” Moreover, the website and Facebook account of PFRB are utilized to air the programs and provide a platform where the broadcasters and listeners can interact. These web-based pages are utilized to update the target audiences about the latest developments in the

agriculture sector, threats of climate change, and benefits of climate-smart technologies and practices, among others.

These pages can be accessed through the following links:

- PFRB Facebook: [Pfrb Rural Broadcasters](#)
- PFRB Website: [Rural Broadcasters Community](#)
- DA-RFO 02 Facebook: [DA Rehiyon Dos](#)

The scripts that discuss climate change and CSA are now finished and are packaged inside a broadcaster's manual (Annex 3). The rest of the materials produced by this campaign, including plugs and interview videos in Tagalog and Ilokano, are stored via Google Drive. The materials can be accessed through the link below:

- [Climate Change, iBroadkas Mo!](#)

Key PFRB officials met with Dr. Sebastian on 2 April 2019 at the International Rice Research Institute to present the scripts and other materials. Dr. Navarro, serving as PFRB adviser and CCAFS SEA consultant, attended the meeting as well.

## **Complementary campaign**

*"Climate Change, iBroadkas Mo!"* is implemented alongside a school-on-the-air on climate-smart agriculture (SOA-CSA) in Cagayan Valley. PFRB coordinates with DA-RFO 02 to ensure that these two radio-based initiatives are complementing each other.

The SOA-CSA project was able to produce almost 5,000 graduates in Region 2. The graduates exhibited a deep understanding, appreciation, and application of CSA technologies and practices. They were able to listen to the Tagalog and Ilocano jingles, which were all included in the 60 modules aired from March to July 2018. The modules were aired in a 30-minute program over 14 radio stations in Cagayan Valley every 5:30 AM on Mondays, Wednesdays and Fridays.

## Annex

### Annex 1: Program template

DAY 00		
Time	Activity	In-charge
1600-1900	Registration/Check-in of Participants	PFRB
1900-2200	Dinner/Introduction of Participants	Participants
DAY 01		
Opening Program Emcee: PFRB Rapporteur: CCAFS SEA		
0830-0930	Welcome Address	High-level official from the hosts
	Opening Remarks	PFRB
	Message	High-level official from the hosts; local government authorities
	Workshop Overview	CCAFS SEA; PFRB
Plenary Session: Understanding Climate Change, Agriculture and Food Security Moderator: Chito Morante Rapporteur: Renz Louie Celeridad		
0930-1000	Climate Outlook in the Region	Forecaster from the Philippine Atmospheric, Geophysical and Astronomical Services Administration
1000-1030	Coffee Break	
1030-1100	Climate-smart Agriculture Technologies and Practices	Expert from an agriculture university; expert from an organization covering agriculture
1100-1230	Tour/Field Visit	Host University (if applicable)
1230-1330	Lunch Break	
Panel Discussion: Climate Change Mitigation and Adaptation Practices in Agriculture Moderator: Chito Morante Rapporteur: Renz Louie Celeridad		
1330-1400	Climate-smart Agriculture: Walking the Talk	CCAFS SEA
1400-1500	Farmers' Testimonial	Farmers
1500-1530	Coffee Break	
Workshop 01: Identifying Topics in Broadcasting Climate-smart Agriculture Facilitator: Rogelio Matalang Rapporteur: Renz Louie Celeridad		
	Pointers in Radio Production	PFRB
	Pointers in Radio-TV Hosting	PFRB



1530-1600	Workshop Mechanics	PFRB
	Group Workshop	PFRB
	Presentation of Group Ideas	PFRB; CCAFS SEA; others
<b>DAY 02</b>		
<b>Workshop 02: Producing RTBA Prototypes for Climate-smart Agriculture</b> <b>Facilitator: Chito Morante</b> <b>Rapporteur: Renz Louie Celeridad</b>		
0800-1200	Broadcast Production Workshop	Workshop Groups
1200-1230	Lunch Break	
1230-1430	Finishing Touches of Broadcast Production	Workshop groups
1430-1530	Presentation and Critiquing of Group Outputs	PFRB; CCAFS SEA; others
1530-1600	Coffee Break	
1600-1630	Workplan for the PFRB Phase 2 Campaign	PFRB
1630-1700	Synthesis and Closing Program	PFRB; CCAFS SEA

## Annex 2: List of participants

### Mindanao workshop

Name	Station/Organization	Email	Contact Number
Maria Eloisa Akut	DA-ATI Region 10	nettemo_akut@yahoo.com	0926-023-5042
Teodulo Badillo	Zamboanga del Sur	---	0907-980-3038
Rico Salvacion	DXID-FM	---	0938-922-2286
Nup Donald Ventura	DXUP	---	0909-204-6161
Guishel Montederamoz	DXFZ-FM	sheng_3773@yahoo.com	0908-246-3027
Daphne Santuyo	DXMG-FM	joy.lipay@gmail.com	0905-510-7390
Crismon Llanos	DXHR-FM	llanoscrismon@ymail.com	0905-290-0801
Roniza Peralta	Radyo Kasuhnan-FM	ron1802@yahoo.com	0975-271-4662
Expedita Roxas	MBC	exped.roxas@gmail.com	0950-341-5289
Philip James Trenal	Mindanao Daily, DXNA 91.3 FM	onlinemindanao2010@gmail.com	0920-238-4820
Ronie Jarapan	Muews Radio 99.3	roniejarapan@yahoo.com	0950-769-3417
Michael Navarro	DXVL 107.7 Lite FM	---	0905-197-6018
Net Ortiz	DWIZ, RPN DXDX	netnetortiz@yahoo.com	0927-127-9125
Noel Visitacion	DXJT/Dalit TV	---	0948-292-7346
Rar Redoblado	DXRT	---	0916-915-8516
Rogelio Matalang	DWDA-FM	rpmatalang@yahoo.com	0927-147-8759
Marilou Alejandro	DZMM	m_angolluan@outlook.com	---
Cheche Masicat	DZMM	clvm17@gmail.com	---
Chito Morante	IBC 6, 87.7 Idol Radio	chitomorante@yahoo.com	---
Renz Celeridad	CCAFS SEA	r.celeridad@cgiar.org	0956-792-8499
TOTAL: 20			

## Visayas workshop

Name	Association/Agency	Email address	Mobile/Telephone
Ma. Jesselyn L. Gabornes	PLGU - OPAS	ludethals@gmail.com	0997-582-8181
Manuel L. Villa	PAGASA	eme_dost8@yahoo.com	0977-771-8931
Mae Claudine Gica	DDC, VSU	maeclaudine.gica@vsu.edu.ph	0977-843-0003
Paul Nigel D. Custodio	DA Region 8	pndc.io1da8@gmail.com	0917-571-1084
Marilou Alejandro	DZMM-PFRB	m_angolluan@outlook.com	0926-682-2685
Cherrie Lyn Masicat	DZMM-PFRB	clvm17@gmail.com	0949-796-2276
Chelo Maderazo	OPA-Leyte	chelomaderazo@yahoo.com	0917-708-4069
Ioannes Omang	DYVR	ioannes_omang58@yahoo.com	0906-380-5783
Sheila Mae Torenó	DA-RFO 6	da_rafido@yahoo.com	0930-344-7552
Myleen Subang	DA-RFO 6	da_rafido@yahoo.com	0917-622-7955
Maita Reina Sucgang	DENR Region 8	rpao_reg8@yahoo.com	888-0159
Jamillahlynn Moron	IBC Region 6	jammoron@yahoo.com	0915-274-5653
Buen Josef Andrade	DYDC-FM	buenjosef@gmail.com	0905-355-3790
Carmela Yamada	DYDC-FM	carmelayamada@gmail.com	0916-143-2586
Dindo Alaras	PCOO-PBS-BBS	dindoalaras@gmail.com	09017-723-3941
Christina A. Gabrillo	DYDC/DevCom	dadaigabrillo@gmail.com	0906-051-9067
Rogelio Matalang	DWDA-FM/DWPE	rpmatalang@yahoo.com	0927-147-8759
Chito Morante	IBC 6	chitomorante@yahoo.com	0915-381-4160
Reinan Rosquites	SRA	bagtikan20129@gmail.com	0997-234-2882

Alfredo Guevara	Farmer	<i>none</i>	0918-539-6218
Francis C. Rosaroso	DA-RFO 8/OASR DA-CO	Francis_ross15@yahoo.com	0920-588-3686
Ruby Calesterio	DA RFO 8	da8_rafis@gmail.com	0995-982-4908
Jonahlyn Saulan	DA RFO 8	jonasaulan@gmail.com	0917-917-0742
Judith Sarda	DA RFO 8	da8_rafis@gmail.com	0910-548-3875
Alex Aborita	Villaconzoilo Farm	villaconzoilofarmschool@gmail.com	0917-1207-689
<b>Total: 26</b>			

### Luzon workshop

Name	Association/Agency	Email Address	Mobile/Telephone
1. Derick L. Camero	ISU Radio	<a href="mailto:derickcamero@gmail.com">derickcamero@gmail.com</a>	0905-848-7626
2. Cherrie Lyn Masicat	DZMM-PFRB	<a href="mailto:clvm17@gmail.com">clvm17@gmail.com</a>	0949-796-2276
3. Marilou Alejandro	DZMM-PFRB	m_angolluan@outlook.com	0926-682-2685
4. Pedrita Medrano	ISU-Echague	pn_medrano@yahoo.com.ph	0905-354-9510
5. Renz Louie Celeridad	CCAFS SEA	<a href="mailto:r.celeridad@cgiar.org">r.celeridad@cgiar.org</a>	0956-792-8499
6. Jestoni Baylon	NVSU Radio DWNS 96.5	<a href="mailto:jbaylon@nvsu.edu.ph">jbaylon@nvsu.edu.ph</a>	0926-771-3558
7. Vivian C. de Guzman	DWPE-Radyo Pilipinas-Tuguegarao	viviancdeguzman@gmail.com	09175785074
8. Felicito Espiritu Jr.	DWLW-DZMM/PFRB	felicitoespiritu@yahoo.com	0975-155-8654
9. Januel Floresca	ISU Echague	<a href="mailto:januelpf@yahoo.com">januelpf@yahoo.com</a>	0905-445-6589
10. Jenny Tabal	ISU Echague	<a href="mailto:jennytabal@gmail.com">jennytabal@gmail.com</a>	0926-479-4945
11. Arthur Urata	DWDA-DA	<a href="mailto:arthur_urata@yahoo.com">arthur_urata@yahoo.com</a>	0926-654-8403
12. Mila Andres	ISU Echague		0999-727-8499
13. Airah Jane Pimpil	ISU Echague	<a href="mailto:pimpil592@gmail.com">pimpil592@gmail.com</a>	0997-966-2140

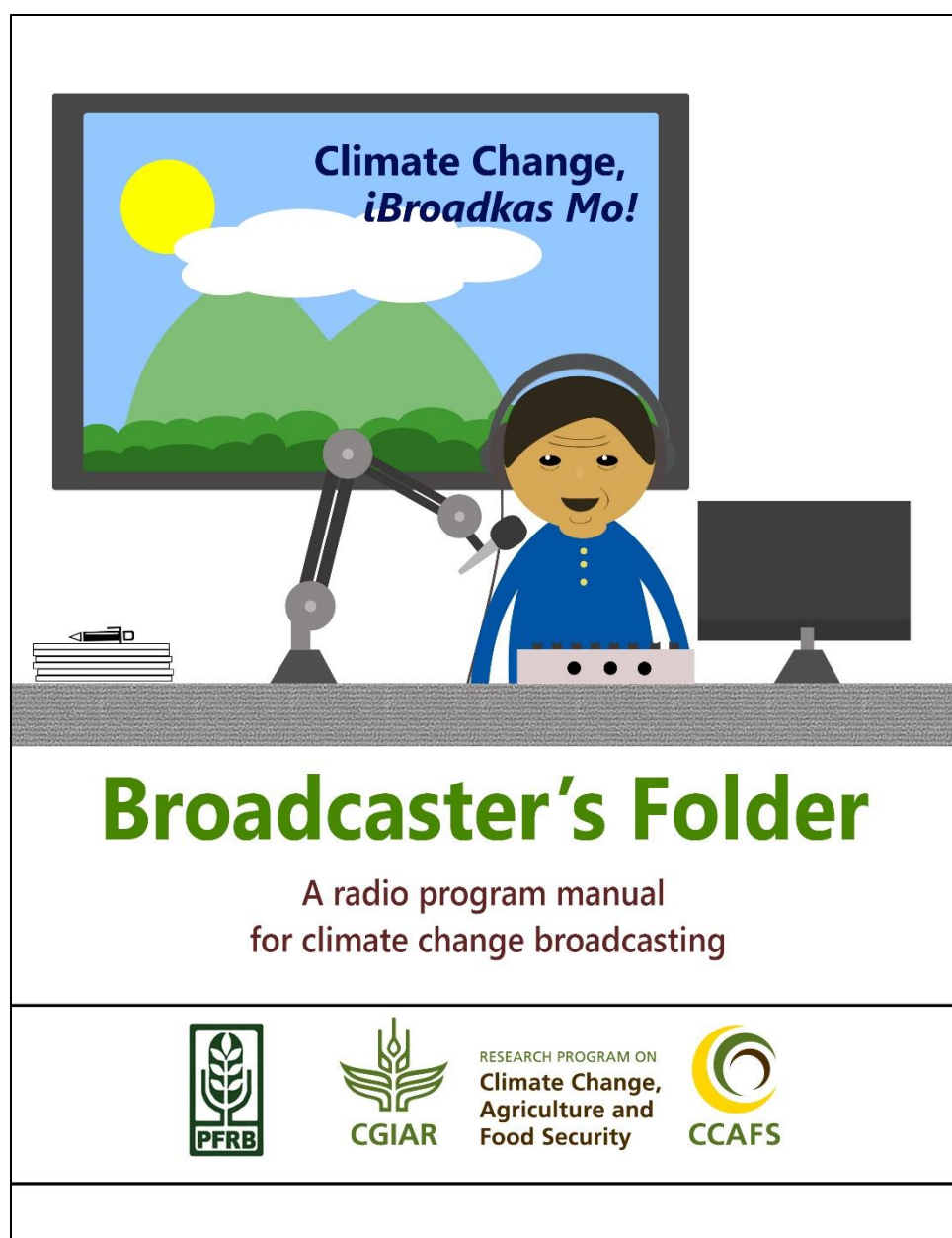
14. Charlot Maramag	CSU-Gonazaga	charlotmaramag@csu.edu.ph	0935-092-3118
15. Lyra Mae Lorenzo	ISU Echague	<a href="mailto:lorenzolyramae@gmail.com">lorenzolyramae@gmail.com</a>	0955-701-8694
16. Nora Sagayo	BSU-OES	<a href="mailto:norasagayo@yahoo.com">norasagayo@yahoo.com</a>	0908-237-4694
17. Chito Morante	IBC 6	chitomorante@yahoo.com	0919-416-2135
18. Julian Florague	DA RFO 02	<a href="mailto:julianflorague@gmail.com">julianflorague@gmail.com</a>	0926-132-2991
25. Jose Sauli Jr.	ISU Echague	<a href="mailto:Josesauli17@gmail.com">Josesauli17@gmail.com</a>	0936-453-5212
20. Mark Anthony Gallibu	DA RFO 02	markanthony.gallibu@yahoo.com.ph	0977-471-6145
21. Rogelio Matalang	DA RAFIS	rpmatalang@yahoo.com	0927-147-8759
22. Ann Dadivas	ISU Cabagan	ga_dadivas@yahoo.com	0922-791-8245
23. Wilda Joy Tubban	ISU Echague	<a href="mailto:wildstubban@gmail.com">wildstubban@gmail.com</a>	0977-786-4776
24. Jenibel Dizon	ISU Echague	<a href="mailto:jenibeldizon@gmail.com">jenibeldizon@gmail.com</a>	0907-982-1161
25. Manases Lacambra	DA RFO 02	None	0975-174-4562
26. Annaliza Presentacion	ISU Echague	None	None
27. Gil Zipagan II	ISU Echague	None	0975-941-2570
28. Hazel Rod Delmondo	ISU Echague	None	0955-412-7966
29. Mae Barangan	Northern Sina Roces Magazine	None	0935-841-8994
30. Andres Dela Cruz	PhilRice	None	0916-827-7234
31. Esmeraldo Reyes	DZMM (Sa Kabukiran)/PFRB	None	none
32. Hector Tabbun	DA Region 2	None	0917-818-0345
TOTAL: 32			



### Annex 3: Broadcaster's manual

The cover of the broadcaster's manual is showing an old broadcaster currently on air. The cover is dedicated to the late, *Ka Louie Tabing*, former chairperson of PFRB, and a renowned broadcaster who advocated for projects that would benefit smallholder farmers and fisher folks.

The scripts, as agreed by PFRB and CCAFS SEA, were written in Tagalog then translated into four more languages (Bisaya, Ilocano, Maguindanaon, and Marano). The translated scripts are uploaded in the Google Drive folder.



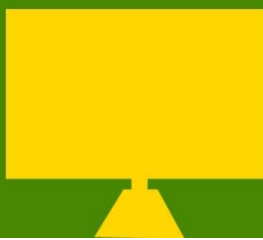
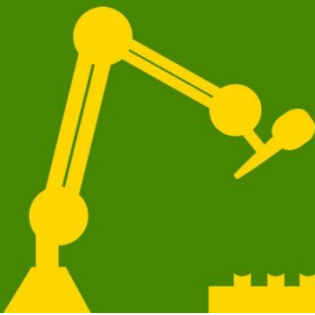


## **Ano ang dapat gawin ng LGU, Kagawaran ng Pagsasaka, at private sector para matulungan ang mga magsasaka?**

Maraming pwedeng gawin ang mga nasa Local Government Unit, Kagawaran ng Pagsasaka o maging ang mga private sector. Upang matulungan ang ating mga magsasaka sa tinatawag nating climate change effect sa mga sakahan.

Ang isang pwedeng gawin ay mag-introduce ng mga makabagong teknolohiya sa pamamagitan ng demo. Ang ating mga magsasaka kadalasan ay hindi sumusubok ng bagong teknolohiya hangga't walang nakikitang pruweba. Ginagawa ito ng isang private company kasama ng mga kagawaran na tumutulong sa ating magsasaka.

Sa pamamagitan ng technology demo ay makikita nila ang mabuting maidudulot nito sa kanilang sakahan at pinagkakakitaan.



## **Climate Change, iBroadkas Mo!**



## Climate Change sa Pangisdaan

Malaki na rin ang epekto ng climate change sa ating pangisdaan. Noon kapag gusto mong kumain ng isda ay sasaglit ka lang sa ilog at makakahuli ka na. Ngayon kaya?

Sa kwentuhan natin sa isang magsasaka, noon daw ay hindi siya bumibili ng fingerlings para lang magkaroon ng isda sa kanyang maliit na palaisdaan sa bukid. Kusa daw itong nagkakaroon ng mga isda katulad ng hito dalag at maliliit na hipon. Umulan lang ay marami ng mga maliliit na isda. Ganyan ang ating kalikasan noon. Mas masarap pa daw ang isda noon. Totoo ba?

Sa ngayon naman ay pwede tayong bumili ng mga fry sa Bureau of Fisheries and Aquatic Resources para sa ating mga pangangailangan. Lalo na sa mga nagsisimula sa pangisdaan.



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## Ano ang Hybrid Rice?

Ang hybrid rice ay resulta ng pinagcross o pinag-asawa na dalawang klase ng palay na lalaki at babae. Kinuha ang kombinasyon ng magagandang katangian ng magulang. Kaya mas maganda at mas maraming kanais-nais na katangian ang anak kaysa alinman sa magulang.

Kapag hybrid ang gagamitin, mas kakaunting binhi ang ipinupunla. Yan ang isa sa kabutihan ng hybrid. Para sa isang ektarya gagamit ka lang ng maximum na 20 kilo ng binhi, samantalang kung inbred ay kailangan ng 80 - 150 kilo sa isang ektarya. Ang big sabihin kahit mas mura ang inbred seeds marami ang gagamitin kumpara sa hybrid. Pwede nang ipabigas at pangkain ng magsasaka sa halip na gamitin sa binhi. Mas makakatulong sa kasapatan sa pagkain. Mas marami naman ang ani sa hybrid.

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## **Bakit Kailangan ng Hybrid Rice?**

Marami na sa ating mga magsasaka ang naapektuhan na ng Climate Change. Kung hindi sobra sa tubig ay kulang naman. Kaya sa isang bayan sa Tarlac ay nagtatanim sila ng Hybrid Rice kapag panahon ng tag-araw. Dito ay nakakabawi sila sa mga panahon ng tag-ulan na hindi sila nakapagtatanim.

Sa Hybrid Rice ay nakaka-ani sila ng doble o higit pa. Ito ang isang nakakatulong sa pabago bagong panahon sa ating mga rice farmer. Pumili nga lamang kayo ng angkop sa inyong lugar at i-adjust nyo sa panahon ang inyong pagtatanim.

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## Bee Farming

Ang bee farming ay isa sa magandang pinagkakakitaan ngayon. Maliban sa nagpapaganda ito ng ani ng halaman, nagpaparami pa ito ng bunga. Maliban dito marami pang pwedeng pagkitaan sa pagaalaga ng pukyutan.

Ang isa sa pwedeng pagkitaan sa pukyutan o honey ay ang pagbebenta ng mga colony. Minsan may nagbenta sa amin P4500 ang isa. Pwede rin kumita sa paggawa ng mga produkto mula sa honey. Nakikita ko sa merkado ang mga produktong pwedeng gawin mula rito ay sabon, shampoo, masage oil at marami pang iba. Isa rin ang honey sa pwedeng sangkap sa paggawa ng mga beauty products katulad ng lipstick.

Hindi rin maipagkakaila na ang pinaka pinagkakakitaan sa pagaalaga ng honey ay ang pulot. Mahal ito sa merkado. Ingat nga lang sa mga peke!



**Climate Change,  
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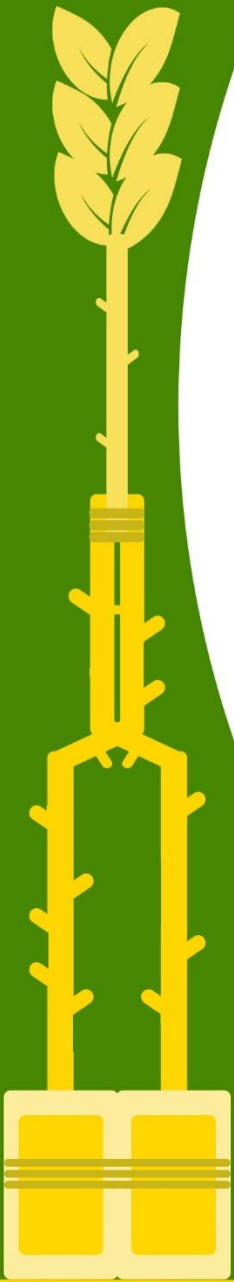
## Double Rootstock Grafting

Ang grafting ay ang pagdudugtong sa seedling at scion. Ang scion ay galing sa namumungang sanga. Ito ay isang paraan upang mamunga agad ang halaman sa loob ng 2-3 years.

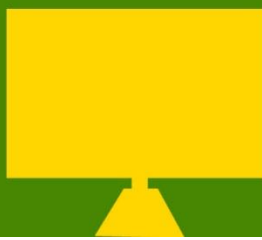
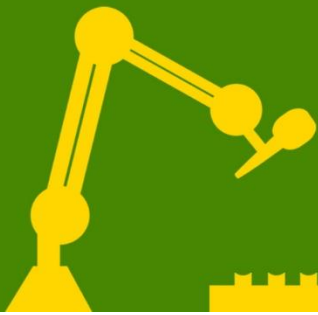
Sa normal na pagtatanim mula sa buto, 10-12 years bago mamunga. Kung idudugtong ay mabilis ito mamunga.

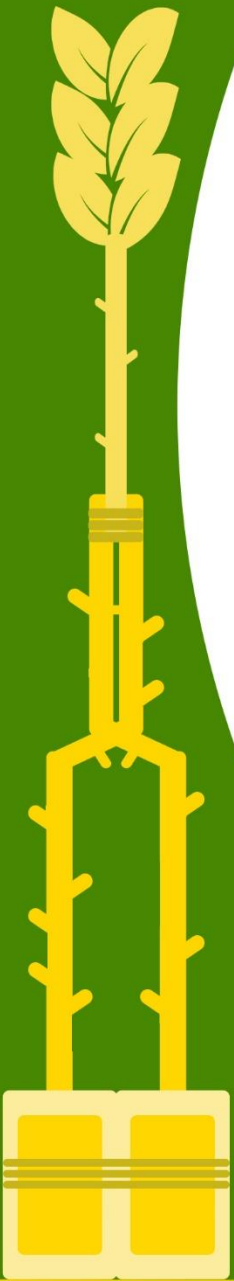
Paano ginagawa?

Putulin ang taas ng green portion ng sanga (seedling) gawa ng vertical cut at ipa gitna ang rootstock at biyakin sa gitna din ang seedling na pareho ng lalim ang hiwa. Ang rootstock ay gawin mo ng wedge cut o hugis palakol at isingit sa rootstock. Ang susunod ay balutin ng mahigpit hanggang sa itaas ang scion. Airtight ang pagbalot para di mapasukan ng hangin at hindi matuyo. Ang plastic ay kusang mabubutas ng bud ng scion na susuloy.

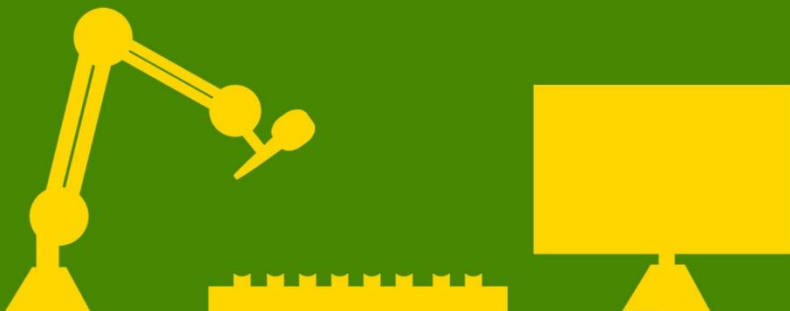


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May matitirang sugat na makikita. Talian ng elastic plastic. Suputan o balutan ng ice candy ang buong scion na dinugtungan. Pagkaraan ng tatlong lingo o isang buwan makikita kung may susuloy (mata) na, atsaka alisin ang balot ng ice candy. Kapag gumulang ang bud ng variety ay tatanggalin ang balot ng scion. At lahat ng sisibol sa rootsock ay aalisin upang magkaroon ng symbiotic relationship ang rootstock-isu supply nya ang scion at ang scion ang gagawa ng pagkain para sa rootsock.



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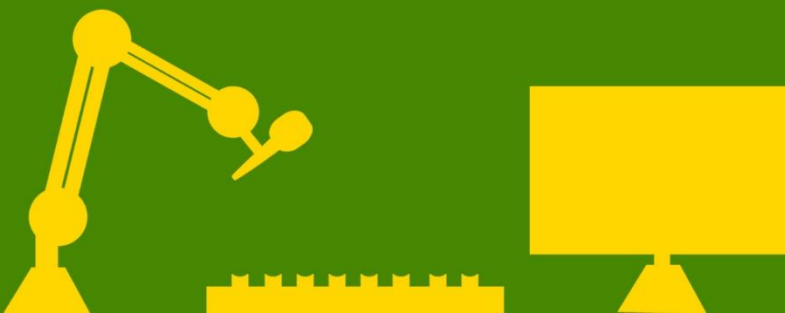


## **Drought Resistant Varieties**

Sa panahon na kulang ang tubig ay kailangan natin makahanap ng binhi na makaka-adopt sa panahon na kulang sa tubig. Marami ng binhi ng palay na nakaka survived sa drought. May mga hybrid at Inbreed rice na pwede nyong pagpilian.

Makakatulong na magtanong kayo sa mga ahensya na tumutulong sa mga magsasaka. Katulad ng Kagawaran ng Pagsasaka o sa PhilRice tungkol sa mga naaangkop na binhi sa inyong lugar. May mga technician din na handang tumulog upang kayo ay maka-agapay sa epekto ng Climate Change sa inyong mga pananim o palayan.

Mabuting alam natin ang mga ito upang tayo ay matulungan sa pagdedesisyon pagdating sa ating mga sakahan. Makakaiwas din tayo sa mga gastos na hindi kailangan.



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## Early Maturing rice Varieties

Ang isa sa pwedeng makatulong sa ating mga magsasaka ng palay upang makasabay sa pabago bagong panahon ay ang mga variety na maaga kung anihin, tulad sa palay. Marami na ito sa ating merkado. May in breed at hybrid rice.

Ito ay nakakatulong upang hindi kayo abutan ng kakulangan o sobra sa tubig na kailangan ng inyong pananim. Isa ang hybrid rice na pwedeng makatulong, maging ang ating inbreed rice. Mahalaga lamang na magtanong kayo sa mga eksperto ng mga binhi na naaangkop sa inyong mga lugar. Ito ay para masiguro ang inyong ani at kita.



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## Farm Mechanization

Ang isa sa isinusulong ngayon sa pagsasaka ay ang paggamit ng mga makina. Malaking tulong ito dahil mas pinapabilis ang ating mga gawain sa bukid.

Ang inaalala nga lamang nila ay ang epekto nito sa ating kalikasan. Ayon sa ating mga gumagamit ng mga makinarya ay hindi na ito gaano mausok na syang sanhi ng air pollution. Ito ay dahil sa mga makabago ng teknolohiya.

Maraming kabutihan na naidudulot ito sa ating mga magsasaka. Meron na kasing mga harvester na makina na saglit na lang kung mag-ani, at naka sako pa agad. Hindi sila inaabutan ng pabigla biglang ulan na syang makakasira sa kanilang ani. Ganon din sa pagtatanim na palay, meron na rin mga ginagamit na makina para rito.

A yellow silhouette of a robotic arm with three joints and a computer monitor on a stand, positioned on a green background.

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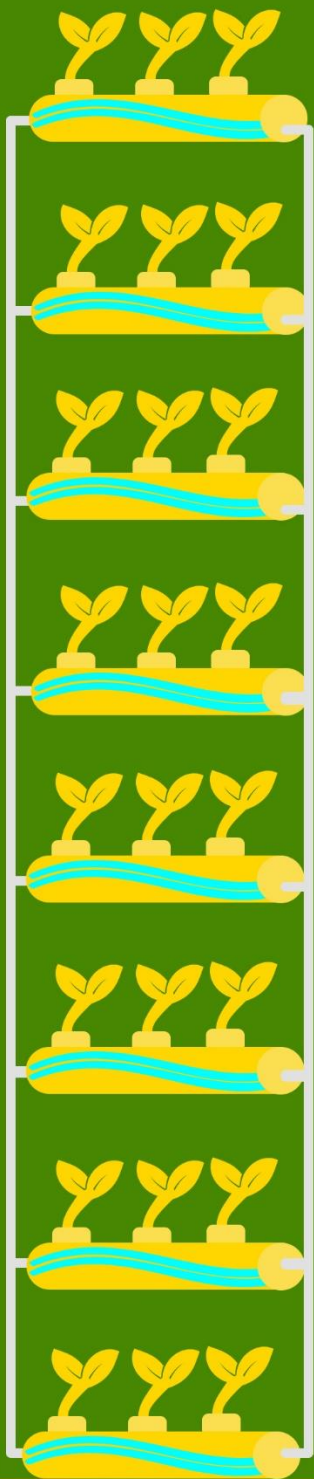


## Flood resistant varieties

Ang baha o tagtuyot ay isa sa problema ng ating mga magsasaka. Gulay, palay o anuman ang kanilang itinatanim ay malaki ang epekto nito sa kanila at maging sa atin na mga mamimili. Maaring konti o wala pa silang maani kapag tinamaan ka ng baha o tagtuyo. At ang epekto nito sa atin ay ang mataas na presyo. Pero kapag nagtanim tayo ng variety na tolerant sa tubig/drought ay malaking tulong ito.

Kung pumipili tayo ng binhi na angkop sa ating lugar, ay pwede pa tayong umani ng marami. Lalo na kung tolerant ito sa flood o drought. Marami na po ito sa ating merkado, kailangan lang nating magtanong sa tamang ahensya o kinaukulan na pwedeng tumulong sa atin.

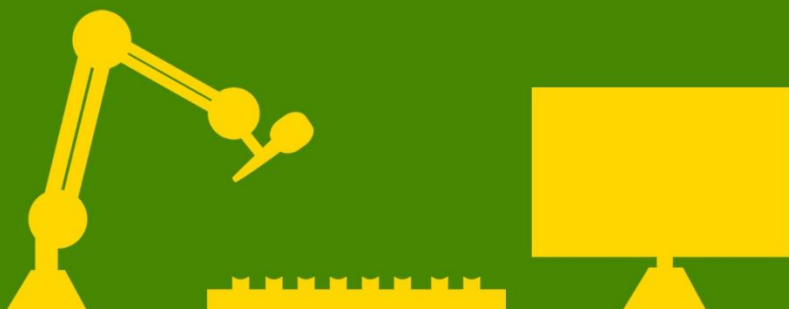
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## Hydroponics

Ito ang paraan ng pagtatanim sa tubig. Hindi natin kailangan ng lupa upang magtanim. Tubig( na may nutrients) at solution ang kailangan para magtanim. Nabuo ito para sa mga nasa syudad na walang lupa at gusting magtanim ng mga gulay para sa kanilang sariling konsumo.

Tipid ang hydroponics dahil minsan mo lang itanim hanggang sa magharvest ka, kumpara ito sa lupa na mas labor intensive. May mga kailangan nga lang kayong mga materials upang makagawa ng hydroponics na paraan ng pagtatanim. Sa mga interesado, pinalalaganap na po ito ng Kagawaran ng Pagsasaka, magtanong po kayo sa pinakamalapt sa inyong lugar.



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## **Irrigation Technologies**

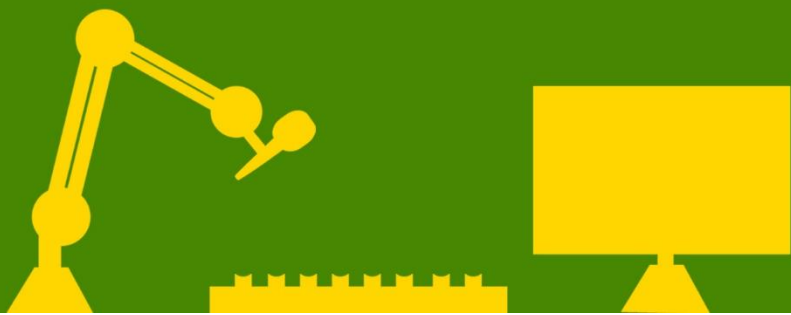
Tubig, malaking porsyento nito ang kailangan natin upang maka-ani ng mabuti o marami. Dahil sa climate change ay madalas kung di sobra ay kulang ang ating tubig. Ang National Irrigation Administration(N-I-A) ay may mga teknolohiya upang matulungan ang ating mga magsasaka.

Upang makatulong ay may mga teknolohiya silang ibinabahagi sa ating mga magsasaka. Ang isang ginagawa ay rotational method of distribution ng tubig. Ito ay upang ang lahat ay magkakaroon ng tubig. Upang maka save din ng tubig at pinapayuhan na gawin ang alternate wetting and drying ng mga sakahan.

Puntahan ninyo ang N-I-A sa inyong lugar upang malaman ang angkop na teknolohiya para sa inyong sakahan.



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## Organic Pest Management

Mahalaga ito sa ating mga magsasaka. Lalo na at pamahal ng pamahal ang inputs ngayon. Dito kasi kadalasan nalulugi ang ating mga magsasaka. Kadalasan tinitipid dahil sa mahal ng pataba.



Hindi na lingid sa ating mga magsasaka na pwede ng matutunan ang paggawa ng mga organikong pataba. Itinuturo ito ng Kagawaran ng pagsasaka. Ang iba naman na private sector ay nagtuturo din.

Ang payo sa atin ng isang magsasaka ay ang mabuting pananggalang sa mga peste ay ang bakas ng magsasaka. Ibig pong sabihin ay dapat nappasyalan ng magsasaka ang kanilang farm ng madalas. Ito ay para makita ang problema sa simula pa lang.

Kadalasan kasi may mga mabilisang remedy sa peste kapag ito ay bagong atake pa lamang.



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## Transplanting/Self Watering Lettuce

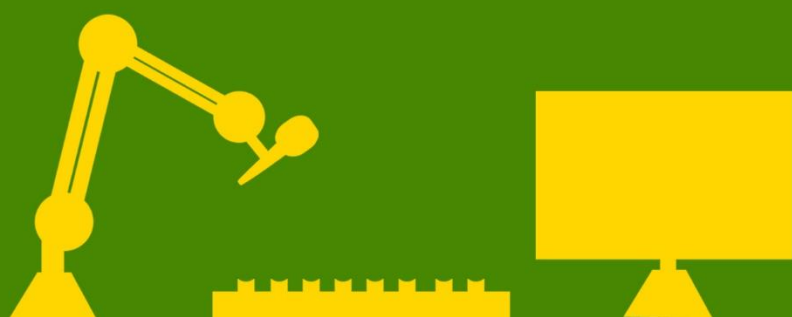
Alam ba ninyo na kahit sa maliit na bote ay pwede tayong magtanim ng mga leafy vegetables. Ang isa rito ay ang lettuce. Ang iba itinatanin lang sa mga bote ng inumin na ating binibili. Ang iba pang pwedeng itanim sa bote ay mustasa, petchay, alugbati, kamote at iba pa na madahon nag gulay. Yung hindi masyadong malalaking halaman ay pwede rin. Ang halimbawa ay kamati, talong at sili.



Sa Letsugas naman ay pwede natin gamitin ang bote ng mineral upang pagtamnan ng lettuce. Hiwain nyo po sa dalawa ang bote sa gitna. Ang gagamitin parte ay yung taas butasan nyo ang taas na may takip, para doon sisipsip ng tubig at butasan nyo rin ng apat ang gilid sa ibaba ng takip. Doon lalabas ang ugat nito.



Paano ilagay ang letsugas? Lagyan muna ng pataba at garden soil ang bote atsaka ilipat ang inyong letsugas.




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## Urban gardening

Ang urban gardening ay ang pagtatanim ng mga gulay kahit ikaw ay nasa gitna ng syudad. Ito ang ginagawa ni Mr. Mer Layson ang magsasakang reporter na nakatira sa gitna ng Maynila.

Itinatanim niya ito sa mga bote ng inumin. Ang ibang naman, ang paraan ng kanilang urban gardening ay ang pagtatanim sa mga maliliit na paso o mga gamit na luma o nasira, na pwedeng pagtamnan. Kapag bote ang gingamit, isinasabit lang ito sa may veranda ang mga bote na may tanim na gulay. Maaring itanim rin ang talong, sili, letsugas, patchay, kangkong sa bote lamang.



Laganap na ito sa mga syudad sa Maynila. Isa ito sa mga proyekto ng Local Government Unit.



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## Vermicomposting

Ang vermicomposting ang isang nakakatulong sa ating mga magsasaka upang maiwasan ang paggamit ng kemikal, na nakaka contribute sa pagsira ng ating kalikasan. Laganap na itong ginagawa sa atin dito sa Pilipinas.

Maganda ang dulot nito sa ating mga halaman, mula sa seedling hanggang sa magbunga. Sa karanasan ng mga gumamit ng Vermi ay nakapagpaparami ng bunga at nagpapaganda ito ng halaman.

Maliit na espasyo lamang ang kailangan sa mga gustong magsisimula ng vermi. Mga dumi nito ang ginagamit para sa mga halaman. Yan ang tinatawag na vermi compost.

A yellow robotic arm with a circular end effector is positioned next to a yellow computer monitor on a stand. Below the monitor is a yellow keyboard. The background is green.

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